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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/617,120

07/14/2000

Yoko Katsuya

925-151

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23117

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10/19/2004

NIXON & VANDERHYE, PC
1100 N GLEBE ROAD
8TH FLOOR
ARLINGTON, VA 22201-4714

EXAMINER

NGUYEN, DUNG T

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,120

Applicant(s)

KATSUYA, YOKO

Examiner

Dung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-18,25-40,46 and 48-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-18,25-40,46,48-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment dated 07/23/2004 has been received and entered. By the amendment, claims 8-18, 25-40, 46, 48-52 are now pending in the application.

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 8-10, 12, 15-18, 26, 29-38 and 48-52 stand rejected under 35 U.S.C. 102(e) as being anticipated by Ohtani et al., US Patent No. 6,690,031, as stated in the previous office action.

The above claims are anticipated by Ohtani et al. figures 1, 5 and accompany text which disclose an active matrix liquid crystal display (LCD) device comprising:

- an insulating substrate (101);
- a gate line (502) and a source line (503);
- a thin film transistor (102) as claimed;
- a transparent conductive pixel electrode (108) having a specific resistance of not greater than $1\text{m}\Omega\text{cm}$ (e.g., ITO) and connecting to the TFT (figure 1);
- a liquid crystal layer inherently forming between the TFT substrate and an opposite substrate (according to an LCD device);
- a supplementary capacitance (auxiliary capacitor) (109) being provided by the pixel electrode (108), a supplementary capacitance use transparent insulating film (silicon nitride layer 105) formed under the pixel electrode and a transparent conductive (ITO) common electrode

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(104), wherein a difference between a refractive index of the auxiliary capacitor use transparent insulating (i.e., refractive index of the silicon nitride) and a refraction index of the pixel electrode/the common electrode (i.e., refractive index of the ITO) is not greater than 0.6;

a thickness d of the auxiliary capacitor use transparent insulating satisfies the equation $d = \lambda / (2 * n) * m$, wherein λ is a wavelength of transmission light (e.g., visible light), n is a refractive index (see col. 4, ln. 67).

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 11, 25, 27-28, 39-40 and 46 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al., US Patent No. 6,690,031, in view of Zhang et al., US Patent No. 5,982,460, as stated in the previous office action.

Regarding the above claims, Ohtani et al. disclosed the claimed invention as described above except for the pixel electrode and common electrode are cover at least portions of the gate/source bus line and the common electrode is arranged between the gate/source bus line and the pixel electrode. Zhang et al ('460) do discloses that a pixel electrode (24a/24b) and a common electrode (22) which constitution a capacitor (25a/25b) can be covered a gate bus line as well as a source bus line (figures 1E and 2C-2D). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a common electrode covering the gate bus line and the source bus line as shown by Zhang et al. in order to protect a

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wiring electrode (e.g., gate bus line and/or source bus line and/or TFT) underneath and protect signals on each bus line not being applied to the pixel electrode (see abstract).

5. Claims 13-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al., US Patent No. 6,690,031, in view of Yamazaki, US Patent No. 6,482,684, as stated in the previous office action.

Regarding claims 13-14, Ohtani et al. disclosed the claimed invention as described above except for the active layer made of polysilicon by utilizing a catalytic effect of an introduced catalytic element. Yamazaki discloses a TFT having an active layer made of polysilicon by utilizing a catalytic effect of an introduced catalytic element (see abstract), as a switching element in a pixel circuit as well as a driver circuit (figure 6). Therefore, it would have been obvious to one skilled in the art the time of the invention was made to use a TFT element having a polysilicon active layer for a pixel circuit and a driver circuit, in which the polysilicon active layer crystallized by utilizing a catalytic effect of an introduced catalytic element as shown by Yamazaki in order to promote crystallization (high crystallization) in a TFT element (see abstract).

Response to Arguments

6. Applicant's arguments filed 07/23/2004 have been fully considered but they are not persuasive.

Applicant contends that Ohtani's aforesaid equation is not equal to that required by claimed invention (amendment, page 12). The Examiner is not convinced by this argument since the same is true of the capacitance insulator thickness. In particular, although Ohtani et al. do not exactly disclose the equation of $d = \lambda / (2\pi n) \times m$, Ohtani et al. do disclose the expression of the

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thickness of the capacitance insulator related to an index of refraction of the capacitance insulating film n as in the equation $d = \lambda / (4 \times n)$. In addition, such Ohtani et al. can be rewritten as $d = \lambda / (2 \times n) \times m$, wherein $m=2$ (m is an integer). In other words, the Applicant's equation and the Ohtani et al. equation would be the same as well.

Accordingly, the limitation of the above claims met.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

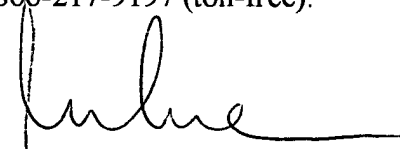
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
10/15/2004

A handwritten signature in black ink, appearing to read 'Dung Nguyen', with a long horizontal flourish extending to the right.

Dung Nguyen
Primary Examiner
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